FEDERAL AVIATION AGENCY

7A10
Revision 2
de HAVILLAND
D.H. 106 Comet 4C

August 8, 2003

TYPE CERTIFICATE DATA SHEET NO. 7A10

This data sheet which is a part of type certificate No. 7A10 prescribes conditions and limitations under which the product for which the type certificate was issued meets the airworthiness requirements of the Civil Air Regulations.

Type Certificate Holder — The de Havilland Aircraft Co., Ltd.
Hatfield, Hertz, England

I - Model D.H. 106 Comet 4C (Transport Category), Approved December 21, 1960

Engines — 4 Rolls Royce Avon 525B turbojets

Fuel — The following Aviation Kerosene Specifications are approved:

British:	D.Eng. RD 2482, 2488 and 2494
Canadian:	3-GP-23C Type 1
American:	A.S.T.M. D.1655-59 T Type A or Type A-1 and United Airlines Specification UA-1
I.A.T.A.:	Kerosene Type Fuel

The following departures from Specification D.Eng. RD 2494 are acceptable:

Flash point	Minimum 70°F
Mercaptan Sulphur	Maximum 0.016% by weight

Oil — D.Eng. RD 2487 (Type RD E/O/463) or Esso Aviation Turbo Oil 35

Engine limits — Static Sea Level Ratings

Rating	Minimum Thrust (Lb.)	Maximum RPM	Max. Turbine Exhaust Gas Temp, °C
Maximum takeoff (5 min.)	10250	8050	625
Maximum continuous	8765	7600	570

Airspeed limits (I.A.S.)

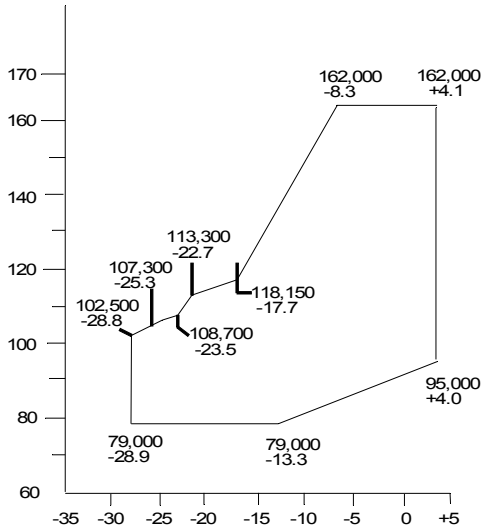
Vne (never exceed)	305 kt. or Mach 0.79, whichever is the lesser
Vno (normal operating)	275 kt. or Mach 0.76, whichever is the lesser
Va (maneuvering)	199 kt.
Vfe (flaps down 0° to 20°)	210 kt.
Vfe (flaps down 20° to 30°)	190 kt.
Vfe (flaps down 30° to 40°)	170 kt.
Vfe (flaps down 40° to 60°)	150 kt.
Vfe (flaps down 60° to 80°)	140 kt.
Vlo (landing gear operation)	185 kt.
Vle (landing gear extended)	210 kt.
air brake operation	305 kt. or Mach 0.79, whichever is lesser
air brake extended	305 kt. or Mach 0.79, whichever is lesser
Vmc (minimum control)	Less than the stalling speed

Elevator Gear Change Limitations:

Minimum airplane speed in 'fine gear'	170 kt.
Maximum airplane speed in 'coarse gear'	200 kt.

C.G. range (Landing gear extended)

The nose gear retraction moment is 27,000 in.lb.
Main gear retraction has no effect on the airplane C.G.



Datum

702 in. aft of the fuselage nose

Standard mean chord (S.M.C.)

222 in. (L.E. of S.M.C. is 640.8 in. aft of fuselage nose).

Leveling means

Fuselage sighting rods and microptic level for longitudinal leveling.
Leveling bar and spirit level in conjunction with datum sockets in rear freight hold for lateral leveling.

Maximum weight

Maximum taxi	162,000 lb.
Maximum takeoff	162,000 lb.
Maximum landing	120,000 lb.
Maximum zero fuel	102,500 lb.

Minimum crew

3. Pilot and copilot (-628.8), flight engineer (-582)

Maximum passengers

107 passengers. (See approved weight and balance report for actual number and location.)

Maximum baggage

Compartment	Maximum Total Floor Load (lb.)	Maximum Floor Loading (lb. sq. ft.)	Moment Arm (In.)
Freight Compartments			
Forward Hold			
Fwd. of Datum A (Frame 17)	783	75	-426.6
Between Datums A & B	257	75	-372.6
Frames 17 & 19			
Aft of Datum B (Frame 19)	1,971	75	-271.2
Center Hold			
Fwd. of Datum A (Frame 42)	1,296	75	+144.0
Between Datum A & B	257	75	+212.4
(Frames 42 & 44)	1,512	75	+290.4
Rear Cabin Hold	3,140	150	+434.4

Fuel capacity

(See NOTE 1(b) for data on system fuel.)

TANK	TOTAL (lb.)	USABLE	MOMENT ARM (in.)
1 center wing tank (No. 1)	16095	16031	(-26.5)
2 inner wing tanks (No. 2)	12639	12607	(-32.2)
2 middle wing tanks (No. 3)	22462	22398	(-49.4)
2 outer wing tanks (No. 4)	13409	13313	(+108)
2 external wing tanks (No. 4A)	6944	6816	(- 7.2)

Oil capacity

(See NOTE 1(b) for data on system oil.)
1.04 U.S. gal. per engine (-7.4)

Max. operating altitude

40,000 ft.

Other operating limitations

Aircraft shall be operated in compliance with the operating limitations specified in the Air Registration Board approved Airplane Flight Manual.

Control surface movements

Elevator					
Coarse gear	Up	23°	Down	10°	(From neutral trim
Fine gear	Up	12° minimum	Down	5° minimum	position)
Elevator balance tab	Up	13° 20'	Down	30° 38'	
Rudder	Left	28°	Right	28°	(From neutral trim position)
Aileron	Up	22° 30'	Down	22° 30'	(From neutral trim position)
Aileron balance tab	Up	6° 10'	Down	6° 10'	
Flaps					
2 inboard sections		80° Total angle of travel			
2 outboard sections		58° Total angle of travel			
Airbrakes					
Inner	Up	27°			
Outer	Up	84°	Down	72°	

Auto pilot limit switches

Elevator movement from neutral trim position				
Coarse	Up	2° 24'	Down	1° 24'
Fine	Up	0° 30'	Down	0° 30'
Aileron movement from neutral trim position				
Coarse	Up	15°	Down	15°
Fine	Up	3° 45'	Down	3° 45'

Serial Nos. eligible

6424, 6425, and 6443 provided a United Kingdom Certificate of Airworthiness for export endorsed as noted under "Import Requirements" is submitted for each individual aircraft for which application for certification is made.

Import requirements

A U.S. Airworthiness Certificate may be issued on the basis of:

a) A United Kingdom Certificate of Airworthiness for Export which contains the following notation:
"The aeroplane covered by this certificate has been examined and found to comply with British Airworthiness Requirements (July 1, 1956) and the Special Conditions for the Comet notified by the U.S.A. Government of the United Kingdom and conforms to T.C. 7A10,:

b) Satisfactory evidence that all applicable inspections and modifications classified as "Mandatory" by the U.K. Civil Aviation Authority, and compliance with all FAA Airworthiness Directives have been accomplished. (A current list of all CAA "Mandatory" modifications and inspections may be obtained upon request from the Chief, Aircraft Certification staff, FAA, c/o American Embassy, APO New York, N.Y. 09667); and,

c) An FAA finding that the airplane conforms to T.C. 7A10 and is in a condition for safe operation pursuant to FAR 21.183(c).

Certification basis

CAR 10, equivalent to CAR 4b effective December 31, 1953, plus amendments 4b-1, 4b-2, 4b-3, 4b-4, 4b-5, 4b-6; except paragraphs 19 4b.358 (b)(5) and 47 4b.645(e); 4b-7, 4b-8; except paragraph 17 4b.612(b); 4b-9, 4b-11 and S.R.422B.

Compliance with the ditching requirements has been demonstrated.
Compliance with the icing protection requirements has been demonstrated.

Type Certificate No. 7A10 issued December 21, 1960.
Date of Application for Type Certificate June 11, 1956.

Equipment

The basic required equipment as prescribed in the applicable airworthiness regulations (see Certification basis) must be installed in the aircraft for certification.
Approved equipment is shown on de Havilland Equipment Schedule M.31410.
The following additional equipment is required:

(a)	Stall warning stick shaker D.H. drg. 6-2 CF 1941	4 lb. (-645)
(b)	High speed warning, 1 horn KLAXON 2K	3 lb. (-606)
(c)	Artificial feel, 'q' pot elevator control system D.H. drg. 6-4B CF 313A	17 lb. (-653)
(d)	Rudder limiter D.H. drg. 6-4B CF 337A and 6-4 CF 1449 A/1	8 lb. (-669)
(e)	Rudder centralizer LOCKHEED part no. AIR 107270	2 ¼ lb. (+639)
(f)	Artificial feel, spring struts:	
	Elevator control system 6-4B CF 779A/1	3 lb. (-636)
	Aileron control system 6-4C 10725 A.N.D.	3 lb. (-643)
	Rudder control system 6-4B CF 145/3	2 lb. (-669)
(g)	Yaw damper, rudder control system:	
	2 detector and amplifier SMITHS 300 EAP	23 lb. (+123)
	2 actuator SMITHS 302 EAP	11 lb. (+403)
(h)	Control surface position indicators:	
	Aileron: 2 transmitters SMITHS 875 F./BR	1 ½ lb. (+146)
	1 indicator SMITHS PW 873/FL/BR	1 lb. (+654)
	Elevator: 1 transmitter SMITHS 875 FL/BR	3/4 lb. (+642)
	Rudder: 1 transmitter SMITHS 875 FL/BR	3/4 lb. (+646)
	Elevator/Rudder:	
	1 indicator SMITHS PW 873/FL/BR	1 lb. (-654)

NOTE 1. (a) Current weight and balance report, including list of equipment included in certificated empty weight, and loading instructions when necessary, must be provided for each aircraft at the time of original certification.

(b) "Unusable fuel" is that amount of fuel in the tanks which is unavailable to the engines under critical flight conditions as defined in CAR 4b.416. This unusable fuel includes the "system fuel" which is defined as the quantity required to fill the system and tanks to the tank outlet level when the airplane is in the ground level altitude. The "unusable fuel" must be included in the airplane empty weight or be suitably accounted for in the airplane weight and balance report. The total amount of fuel is as follows:

Usable fuel (lb.)	Unusable fuel (lb.)
71,165	384

"System Oil" is that amount of oil required to fill the oil system and tanks and is completely contained within the engines. System oil weight is 58 lb. The oil tank capacity shown in this data sheet includes only the usable oil. A sight glass allows to check the oil level.

NOTE 2. The following is a list of aircraft parts, which are critical from the fatigue standpoint, and must be replaced at the times specified.

Component	Part No.	Renewal Times
No. 2 Aileron Hinge Bracket attachment bolts	6.4WE. 5085	12,000 hr.
Nose Wheel Steering Jack attachment bolt	6.UN. 1087 (Pre.Mod.4/1095)	18,000 hr.
	6.4UN. 273 (Post Mod.4/1095)	18,000 hr.
Main Alighting Gear Rocker Arm	6.3U. 39A (Pre.Mod.4/1637C)	1,800 landings
Elevator Primary Servodyne Valve Chest	AIR. 101014 or	10,000 hr.
Rudder Primary Servodyne Valve Chest	AIR. 104582	30,000 hr.
Aileron Primary Servodyne Body	AIR. 100930	15,000 hr.
Aileron Primary Servodyne Connecting Block	AIR. 100932	15,000 hr.
Aileron Secondary Servodyne Body	AIR. 100870	15,000 hr.
Outer Flap Servodyne Body	AIR. 102358 or AIR. 103660	15,000 hr.
Outer Flap Servodyne Valve Chest	AIR. 104654	15,000 hr.
Main Undercarriage Jack Eye End	AIR. 104224 or AIR. 58416	20,000 hr.

NOTE 3. All aircraft must be maintained and repaired in accordance with the Air Registration Board approved Maintenance and Structural Repair Manuals.

NOTE 4. When thrust reversers are not installed throttle levers conforming with de Havilland Comet modification 4/2395 must be installed.

NOTE 5. A FAA Certificate of Airworthiness is not to be issued until compliance is found to SFAR 88.

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